TO:	Mr. Carl P. Garvey and Mr. M. Brendan Mullen (Revitalizing Auto Communities Environmental Response Trust) Mr. Alan J. Knauf and Ms. Linda R. Shaw (Knauf Shaw LLP)
FROM:	Katherine Lasseter, Jason Dittman, Jamie Combes, and Erin O'Connell (TIG Environmental) 443 North Franklin Street, Suite 220, Syracuse, NY 13204
SUBJECT:	**Evidence Summary Memorandum for the Prestolite Site**
DATE:	October 2, 2019

1. Introduction

Revitalizing Auto Communities Environmental Response (RACER) Trust and Knauf Shaw LLP (Knauf Shaw) contacted TIG Environmental[1] to provide consulting services regarding potentially responsible party (PRP) identification and investigation, sampling and data analysis, and expert witness testimony to support RACER Trust and Knauf Shaw during litigation proceedings stemming from a Civil Action No.: 5:18-cv-1267 [DNH/ATB] filed on October 26, 2018 (the Complaint) (RACER 2018).

In the Complaint, RACER Trust, by its attorneys, Knauf Shaw LLP, brings claims for cost recovery and contribution under Sections 107(a) and 113(f) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 U.S.C. 9607(a) and 9613(f), inter alia, against parties (Defendants) operating in or around the Ley Creek Watershed Site (Study Area) in Onondaga County, New York. The Complaint asserts that the Defendants are responsible to contribute to the cost of past and future investigations to address contamination in and around the Study Area.

The Study Area consists of the GM-Inland Fisher Guide Facility (GM-IFG) Sub-Site Operable Unit 1 (OU-1), the expanded OU-2 area (Ley Creek from Townline Road west to Route 11, including creek banks and limited floodplain and hotspot areas), and tributaries upstream of Townline Road bridge.

As defined in the Record of Decision (ROD) for OU-2, the identified contaminants of concern (COCs) at the Site are polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), chromium, copper, lead, nickel, and zinc. PCBs are the predominant contaminants in Ley Creek sediments (NYSDEC and EPA 2015).

[1] TIG Environmental is a member of The Intelligence Group, LLC.

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In this evidence summary memorandum (ESM), TIG Environmental reviewed evidence gathered by RACER Trust and Knauf Shaw to evaluate the following for each Defendant's site:

- Documented and suspected PCB usage at the Defendant's site
- The existence of PCB-containing electrical equipment or electrical substations (utility- or Defendant-owned) on Defendant's site
- Whether pathways exist between the Defendant's site and the Ley Creek watershed (defined as Ley Creek and its tributaries)

Sections 2 through 4 summarize the available information on Defendant operations related, or potentially related to, PCB usage; detections of contaminants at or related to the Defendant's site; permits, waste handling, spills, and/or releases at each Defendant's site; whether pathways from the Site to Ley Creek watershed can be determined; data gaps; and proposed sampling to address identified data gaps. Defendant information, site ownership information, and dates of operation for the Defendant's site are available in Knauf Shaw's site dossier (Knauf Shaw Prestolite Site Dossier).

2. Description of Site Operations Related to PCBs

Operations conducted at the Prestolite Site (the Site) include manufacturing of spark plugs and automotive electrical equipment, fractional horsepower motors and traction motors, small generators, small electric appliances (specifically clocks and can openers), electric windshield wipers, and large motors for use in golf carts (Knauf Shaw Prestolite Site Exhibit D_1, 1, Knauf Shaw Prestolite Site Dossier, 2). Historical operators include Dyneto Electric Company,[2] the Electric Auto Lite Company,[3] Eltra Corporation,[4] and the United States Hoffman Machinery Corp (U.S. Hoffman). Prestolite Electric and all associated entities (Prestolite) operated at the Site from approximately 1910 until 1986 (Knauf Shaw Prestolite Site Dossier, 2; Knauf Shaw Prestolite Site Exhibit D_1,1). The Site Environmental Data Registry (EDR) reports also list Gardall Safe as an operator. Gardall has mainly conducted warehousing and retail operations since at least 2006 (Knauf Shaw Prestolite Site Exhibit A, 1). The Site was subdivided sometime after 1986 and is currently owned by the Syracuse Industrial Development Agency and the 800 Nottingham Road Corporation (Knauf Shaw Prestolite Site Dossier, 3). Reviewed documents do not provide information on exactly when Prestolite ceased manufacturing operations at the Site or whether any manufacturing operations are current occurring and, if they are, the nature of those manufacturing operations.

Since 1951, the Site has contained one U-shaped main building. The opening of the U-shape faces north. During the operational period of U.S. Hoffman and Prestolite, the eastern half of the building contained a crating and shipping room, an assembly room, a print shop with two spray booths, a storage room that doubles as an office, and a machine shop. During this same period, the western half of the building contained two assembly rooms, a spray-painting room, a welding room, a casting shop, a sheet metal

[2] Dyneto Electric Company became the Owen-Dyneto Company sometime before the start of World War I.

[3] In 1973, Electric Auto Lite Company was acquired by Bendix Commercial Vehicle Systems, LLC, which was then acquired by Allied Signal, Inc. in 1986. Allied Signal then merged with Honeywell International Inc in 1999. (Knauf Shaw Prestolite Site Dossier, 2; Deutsch and Holson, 1999).

[4] Eltra Corporation was acquired by Allied Signal, Inc. which then merged into Honeywell International Inc in 1999 (Deutsch and Holson, 1999).

storage room, and an inspection room. At the center of the Site, in between the two arms of the U-shape, there is a separate small building that houses a transformer, boiler, and air compressor (Knauf Shaw Prestolite Site Exhibit B).

Manufacturing of Generators and Sparkplugs

PCB-containing oils were used as insulation liquid inside electrical generators prior to the 1979 ban[5] on PCB use in the United States (Grossman 2013, 1). Since Prestolite manufactured small generators during the period of PCB use in the United States (1940–1980), it is possible that they used PCB-containing insulation oils onsite. Additionally, Prestolite manufactured sparkplugs which require the use of hydraulic equipment, specifically hydraulic presses, which contain hydraulic oils (MadeHow 2019; EPA 2004, 68). Prior to the 1980s, cutting and hydraulic oils commonly contained PCBs (EPA 1976, 43; Erickson and Kaley 2011, 7, 11). Hydraulic fluids are typically associated with Aroclors 1232–1260[6] (Aroclors 1232, 1242, 1248, 1254, 1260) and cutting oils with Aroclor 1254 (Erickson and Kaley 2011, 10). In 1976, the EPA classified use of PCBs in hydraulic fluids as a "nominally closed" application (EPA 1976, 227). Even though hydraulic systems are supposedly closed, the EPA estimated that 60 percent of the PCBs used in such systems were lost to the environment on an annual basis due to spills in the system of inadequate disposal of the PCB-containing materials (EPA 1976, 307).

Welding

Sanborn maps show that a welding room was present onsite from at least 1951–1953 (Knauf Shaw Prestolite Site Exhibit B, 1–2), indicating that Prestolite used welding equipment to support manufacturing operations. Industrial welding equipment that was manufactured prior to the 1979 ban on PCB use likely included one or multiple PCB-containing capacitors (EPA 1976, 27; California DHHS 1988, 2). The average lifespan of similar industrial equipment is approximately 15 years, indicating PCB-containing capacitors were potentially present at the Site until 1994 (State of Nevada, 40). Aroclors 1016, 1242, 1221, and 1254 are known to have been used within capacitors (Erickson and Kaley 2011, 10; DHHS 2000, 494).

Casting

Though the specific nature of casting operations at the Site is unknown, casting operations are historically associated with PCB use. Investment casting is a process by which molten metal is poured into a mold and the resulting component takes the internal shape of the mold, allowing for the formation of precise metal components (EPA 1977, 38; Erickson and Kaley 2011, 14). Frequently, the mold was formed using a wax.

[5] On May 31, 1979, the manufacture of PCBs was banned from non-enclosed uses, effective July 2, 1979 (EPA 1979a). Although PCBs were banned for use in 1979, they did not immediately disappear and are still present throughout the environment in trace quantities, as a result of the EPA-authorized five-year phase-out period and the continued use of these banned materials (EPA 1979b) Some non-enclosed sources may have continued to retain old PCB-containing material and enclosed sources such as transformers may have continued beyond 1984 (EPA 1976, 273; Erickson and Kaley 2011, 2–3).

[6] Beginning in 1935, Swann Chemical Company, followed by the Monsanto Company, produced commercially available PCB-containing goods in a line of products known as "Aroclors." Each of the 10 common PCB Aroclor mixtures are generally associated with certain signatures of PCB congeners (there are 209 PCB congeners) (Erickson and Kaley 2011, 2–3). The style of reporting analytical data for PCBs varies in reviewed documentation. Results may be reported as individual Aroclors and/or congeners, as a sum of all or some of these analytes, or simply as "PCBs." For purposes of this memorandum, TIG Environmental will state "total PCBs" when the source document has reported analytical results as either "PCBs" or "total PCBs." This is presumed to represent the sum of PCB Aroclors or congeners. TIG Environmental will report Aroclor- or congener-specific data where that information is available.

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When the metal is poured into the mold, the wax melts and runs out of the mold (EPA 1977, 39–40, 43, 46). Waxes used in investment and other casting mold processes (such as die casting, sand molding, and core fabrication) are associated with decachlorobiphenyls (DecaCB), a PCB product imported from Italy and associated with PCB congener 209 (EPA 1976, 27, City of Spokane 2015, 2; EPA 1977, 55). In 1976, annual United States commercial use of die casting wax containing DecaCB was estimated at 13 to 22 million metric tons per year (Erickson and Kaley 2011, 10). By 1977, PCBs were no longer used for casting operations (EPA 1977, 55).

Transformer Use

Sanborn maps from 1953 show a transformer, housed in the middle of the Site in a separate building that also housed the boiler and air compressor (Knauf Shaw Prestolite Site Exhibit B, 2). This transformer is shown on the 1990 Sanborn map, and the building in which it was housed exists on the property in aerial photographs dated April 2017 (Knauf Shaw Prestolite Site Exhibit B, 5; Google Earth 2019a). Additionally, by at least 1995, aerial photographs show an electrical power substation that is still present on the Site in 2019 (Google Earth 2019b). This substation is not shown on any of the Sanborn maps. Electrical substations often include transformers that likely contained PCB oils starting in the 1950s through the mid-1980s when their use was phased out in open systems; however, many transformers still contained PCB oils into the 1990s (EPA 2004, 61; EPA 1976, 4). Aroclors 1242, 1254, and 1260 are associated with transformer use (Erickson and Kaley 2011, 10; DHHS 2000, 494).

Paint Spray Operations

Sanborn maps from 1951 show a paint shop in the northwestern corner of the main building and Sanborn maps from 1953 to 1990 indicate this room contained two spray booths (Knauf Shaw Prestolite Site Exhibit B, 2–5). PCBs were historically added to certain industrial paints and other coatings (not for residential or decorative use) as a plasticizer because PCBs improved the coating's adhesion and longevity. Analysis of such coatings in general has resulted in detections of Aroclors 1242, 1248, 1254, 1260, and 1268. This use was discontinued as PCBs were banned from open applications and PCBs are generally not expected in surface coatings used following the early 1970s (Erickson and Kaley 2011, 12–13). After the early 1970s, paint may still be inadvertently associated with PCBs. PCB congeners are present in certain paint pigments and are potentially dispersed into the environment through paint wastes, overspray, and weathering (Hu and Hornbuckle 2009, 2); however, the specific nature of paint used at the Site is unknown. Reviewed documents do not indicate the disposed volumes or durations of disposal of any paint wastes from the Site.

Railroad Spurs

Railroad spurs have existed onsite since at least 1953 (Knauf Shaw Prestolite Site Dossier, 1). From the 1940s to the mid-1980s, transformers were used on rail cars (Slater 1996, 21). PCB fluids and electrical equipment were used in railroad systems (USDOT 1984, 25) and the resulting PCB contamination is an issue at railcar maintenance locations and transit yards (Slater 1996, 29). Equipment typically used in railroad systems includes railroad (on-board) transformers and capacitors (Slater 1996, 31). Aroclors 1260 and 1254 are specifically associated with transformers (Erickson and Kaley 2011, 10).

Wastewater Treatment Operations

A plating room was present on the eastern side of the main building in 1964 (Knauf Shaw Prestolite Site Exhibit B, 3). Additionally, there was a wastewater treatment plant present in 1986 that received the process

wastewater that reportedly originated during plating operations; however, the plant had ceased operation at an unknown date prior to 1986 (Knauf Shaw Prestolite Site Dossier, 3). Because PCBs bind readily to solids, they tend to accumulate in sludge from wastewater treatment plants (European Commission 2001, 66). It is uncertain whether other waste streams generated onsite that could have come into contact with PCBs also discharged to this plant. Reviewed documents do not provide details regarding the location of the wastewater treatment plant, the type of treatment used, or the locations for water discharge and sludge disposal following treatment.

2.1 Discharge Permits, Waste Handling, and/or Spills at the Site

2.1.1 Discharge Permits

No State Pollution Discharge Elimination System (SPDES), National Pollution Discharge Elimination System (NPDES), or other permit information is provided in the available documents for this Site.

2.1.2 Waste Handling Related to PCBs

NYSDEC issued at least four informal written enforcement actions[7] to site operators regarding violations of both general hazardous waste requirements and specific oil-related requirements from 1986 until 2017. Two of the violations are unspecified, and the remaining two relate to proper labeling of hazardous materials as well as disclosure of the removal entity. NYSDEC performed inspections prior to the issuance of each of these enforcement actions; however, the reports for these inspections are not available in reviewed documents (Knauf Shaw Prestolite Site Exhibit A, 8–11).

In October 1988, a citizen reported that six or seven 55-gallon drums, some labeled “PCBs,” had been abandoned at the Site parking area; none of the drums appeared to be leaking at the time (Knauf Shaw Prestolite Site Exhibit C). Reviewed documents do not disclose how this material had previously been used onsite.

2.1.3 Spills Related to PCBs

In 2001, an unidentified individual at the Site reported to NYSDEC that, for approximately a week, an “iradescent [sic] green” liquid was pooled near the loading dock at the Site (Knauf Shaw Prestolite Site Exhibit A, 14). There is no additional information available regarding any testing or remediation that was completed to address this report.

2.2 PCB Discharges to Ley Creek or Tributaries

This section discusses the documented or potential discharge pathways of PCBs from the Site, with emphasis on discharges to Ley Creek or its tributaries.

2.2.1 Direct Discharge

No information regarding outfall or other direct discharges of PCBs is currently available for this Site.

[7] “An ‘informal’ enforcement action under RCRA is broadly defined as ”those actions that are not formal enforcement actions that notify the violator of its violations. These typically represent written notices to alleged violators prior to filing a civil or administrative complaint, order or agreement” (EPA 2010, 5).

2.2.2 Sanitary Sewer

This section discusses the documented or potential PCB-containing discharges from the Site via sanitary sewers.

- A wastewater treatment plant located on the Site accepted process wastewaters produced during plating operations (Knauf Shaw Prestolite Site Dossier, 3). The location and duration of use of this wastewater treatment plant is unclear.

2.2.3 Storm Sewer

No information regarding PCB releases to storm sewers is currently available.

2.2.4 Runoff

This section discusses the documented or potential PCB-containing discharges from the Site to Ley Creek or its tributaries via stormwater runoff.

- The northeast corner of the Site boundary is approximately 500 ft[8] from Teall Brook, a tributary of Ley Creek; however, no evidence currently exists to characterize whether onsite PCB sources discharged via runoff to Teall Brook (ArcGIS 2019).
- Rail spurs on the Site could have potentially functioned as preferential pathways for surface runoff onsite.

2.2.5 Groundwater

This section discusses the documented or potential PCB-containing discharges from the Site to Ley Creek or its tributaries via groundwater.

- No information regarding PCB releases to groundwater is currently available; however, according to Site EDR reports, NYSDEC verified that the “migration of contaminated groundwater” was “under control” as of March 2011 (Knauf Shaw Prestolite Site Exhibit A, 3). This indicates that the groundwater at the Site was contaminated at one point, but the nature of the contamination (i.e., COCs detected in groundwater) was not provided in the available documents reviewed to develop this memo. The hydrologic connection between site groundwater and Ley Creek is not provided in, and cannot be determined from, reviewed documents.

3. Data Gaps

TIG Environmental has identified the following data gaps that would increase the understanding of how PCBs were used onsite and/or released from the Site.

- Exhibit A states that in 1988, a PRP Phase II Investigation and addendum was completed for the Site due to cyanide contamination concerns, but this report is not present in available documents. This report is relevant because it was completed in the same year that the drums of PCB oil were

[8] Distance to Teall Brook was measured in ArcGIS Online using the map measuring tools. The 500-foot distance was measured at approximately a 120-degree angle from the northeast corner of the site boundary and is the shortest possible route for any site discharges to reach Teall Brook and eventually Ley Creek.

abandoned onsite, and, therefore, potentially discusses PCB equipment use and any remaining PCB wastes. Additionally, due to the presence of this PCB waste it is possible that during the investigation into cyanide contamination, the investigators also discovered PCB contamination and included details about PCB detections in site media.

  - Recommendation: Request the 1988 PRP Phase II investigation from NYSDEC.

- No analytical data is available for PCBs at this Site. This limits TIG Environmental's ability to assess the likelihood and extent of PCB contamination onsite.
- Knauf Shaw's site dossier discusses a wastewater treatment plant onsite that received wastewater from plating operations. The location, chemicals used, and final discharge location of this plant are unknown. TIG Environmental's ability to assess potential discharge pathways from the wastewater treatment plant to Ley Creek is limited by this data gap.
- There is currently no information regarding any permitted discharge points used by site operators to discharge process wastewater or stormwater. The evaluation of potential contaminant discharge pathways from site operations to Ley Creek is limited due to this data gap.
- Historical records indicate that site manufacturing has included approximately 9 different products (Knauf Shaw Prestolite Site Exhibit D_1, 1, Knauf Shaw Prestolite Site Dossier, 2). Available documents do not describe precisely how these products were manufactured (including equipment, chemicals used, and wastes produced) or for how long the site operators manufactured them. The assessment of potential site operation connections with PCB use is limited by this data gap.

4. Proposed Sampling to Assess Contributions to the Study Area

Because of the data gaps identified in Section 3, TIG Environmental proposes additional sampling at the Site, as described below. The sampling locations should be analyzed for PCB Aroclors (EPA Method 8082A), PCB congeners (EPA Method 1668C), total organic carbon (Lloyd Kahn method), grain size (ASTM D422), and total solids (ASTM D2216-98). In addition to those parameters, TIG Environmental may also propose sampling for particular contaminant classes (that is, metals, PAHs, volatile organic compounds [VOCs], and semivolatile organic compounds [SVOCs]), depending on the nature of operations surrounding a particular sampling location.

4.1 Soil

Site Sanborn maps indicate that transformers were present from at least the 1950s until the 1970s and were housed in a separate small building between the two larger buildings at the Site. Since transformer use during the 1950s through the 1970s is associated with PCB oils, sampling in the vicinity of the transformer building would give an indication of leakages that may have occurred. Additionally, a review of aerial photographs indicates an electrical power substation present in the open area just north of the buildings since at least 1995. It is possible this substation contained PCB transformers. Site reconnaissance and possibly sampling should be completed to determine whether any PCB leakages from the substation occurred. No additional contaminant classes have been detected at the Site; therefore, sampling is only recommended for PCBs.

4.2 Sediment

The identification of potential sediment sampling locations is limited due to the limited amount of information regarding discharges from the Site. This Site is not adjacent to Ley Creek or its tributaries. Additional information on discharge pathways may be available after we receive the sewer data from the county. Once this data is available, TIG will update this memorandum accordingly. No additional contaminant classes have been detected at the Site: therefore, sampling is only recommended for PCBs.

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